	Application No.	Applicant(s)
Notice of Allowability	10/553,874	IKEDA ET AL.
	Examiner	Art Unit	
	Jurie Yun	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to _amendment filed 6/13/07_.

2. ☒ The allowed claim(s) is/are _1 and 3-11_.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
        Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

The amendment filed 6/13/07 has been entered.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview

with Melvin Kraus on 6/27/07.

The application has been amended as follows:

In claim 1, line 20, delete "ends in the" and replace with --ends in a--

In claim 1, line 28, delete "a attenuation" and replace with --an attenuation--

Allowable Subject Matter

Claims 1 and 3-11 are allowed.

The following is an examiner's statement of reasons for allowance: Prior art fails

to disclose an X-ray image diagnostic apparatus comprising storage means for storing

plural sets of residual image data that attenuate with time, acquired in advance from X-

ray images in X-ray image acquisition modes from the X-ray flat panel detector before

an actual measurement, in correspondence with the X-ray image acquisition modes; an

image memory that stores one frame of the residual image data, which is obtained in a

fluoroscopic mode after X-ray irradiation ends in a radiographic mode and before X-ray

irradiation starts by switching to the fluoroscopic mode, from the X-ray flat panel

detector; a computing unit that reads out quantities of attenuation of the first and subsequent frames of the residual image data in response to time on a basis of one frame of the residual image data stored in the image memory, and subtracts the read quantities of attenuation of the residual image data from a signal outputted from the X-ray flat panel detector; and a control portion that controls the image memory, an attenuation quantity storage portion, and the computing unit on a basis of respective signals, including control signals for each of the X-ray image acquisition modes including a radiographic signal and a fluoroscopic signal, and an image synchronizing signal to enable a display on the display means, as claimed in claim 1. Claims 3-7 are allowed due to their dependency on claim 1.

Prior art fails to disclose an X-ray image diagnostic apparatus, characterized by comprising plural image memories, plural attenuation quantity storage portions, a weight addition quantity storage portion that reads out quantities of attenuation of the first and subsequent frames of the residual image data in response to a time on the basis of one frame of the residual image data stored in each of the image memories, subjects the read quantities of attenuation of residual images to weighting addition depending on magnitude of a quantity of remaining residual images, and stores weight addition quantities; a computing unit that reads out the weight addition quantities stored in the weight addition quantity storage portion in response to a time, and subtracts the read weight addition quantities from a signal outputted from the X-ray flat panel detector; and a control portion that controls the image memories, the attenuation quantity storage portions, and the weight addition quantity storage portion on the basis of respective

signals, including control signals for each of the X-ray image acquisition modes including a radiographic signal and a fluoroscopic signal, and an image synchronizing signal to enable a display on the display means, as claimed in claim 8.

Prior art fails to disclose an X-ray image diagnostic apparatus, characterized by comprising plural attenuation quantity storage portions, each of which stores quantities of attenuation of first and subsequent frames of the residual image data on the basis of one frame from the image memory switched by the first switch, in correspondence with the read pixel matrix of the X-ray flat panel detector; a second switch that reads out a quantity of attenuation of a residual image stored in the attenuation quantity storage portions in response to a time, and makes a switch to the read quantity of attenuation of the residual image data; a computing unit that subtracts the quantity of attenuation of the residual image data switched by the second switch from a signal outputted from the X-ray flat panel detector; and a control portion that controls the image memory, the attenuation quantity storage portions, and the first and second switches on the basis of respective signals, including control signals for each of the X-ray image acquisition modes including a radiographic signal and a fluoroscopic signal, and an image synchronizing signal to enable a display on the display means, as claimed in claim 9.

Prior art fails to disclose an X-ray image diagnostic apparatus, characterized by comprising plural attenuation quantity storage portions, each of which stores quantities of attenuation of first and subsequent frames of the residual image data on the basis of one frame from the image memory switched by the first switch, in correspondence with the single radiographic mode and the continuous radiographic mode; a second switch

that reads out a quantity of attenuation of the residual image stored in the attenuation

quantity storage portions in response to a time depending on the single radiographic

mode or the continuous radiographic mode, and makes a switch to the read quantity of

attenuation of the residual image; a computing unit that subtracts the quantity of

attenuation of the residual image switched by the second switch from a signal outputted

from the X-ray flat panel detector; and a control portion that controls the image memory,

the attenuation quantity storage portions, and the first and second switches on the basis

of respective signals, including control signals for each of the X-ray image acquisition

modes including a radiographic signal and a fluoroscopic signal, and an image

synchronizing signal to enable a display on the display means, as claimed in claim 10.

Claim 11 is allowed due to its dependency on claim 10.

Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jurie Yun whose telephone number is 571 272-2497.

The examiner can normally be reached on Monday-Friday 8:30-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ed Glick can be reached on 571 272-2490. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jurie Yun
Examiner
Art Unit 2882

June 26, 2007